

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A modified human granulocyte-colony stimulating factor(hG-CSF) which ~~is characterized in that~~ comprises at least one of the 1st, 2nd, 3rd and 17th amino acids of wild-type hG-CSF(SEQ ID NO: 2) is to be replaced by at least one other amino acid(s) acid.

2. (Currently amended) The modified hG-CSF of claim 1 ~~whose~~ having an amino acid sequence which is the same as that of wild-type hG-CSF, except that

- (a) the 1st amino acid is Ser;
- (b) the 1st amino acid is Ser and the 17th amino acid is X;
- (c) the 2nd amino acid is Met and the 3rd amino acid is Val;
- (d) the 2nd amino acid is Met, the 3rd amino acid is Val and the 17th amino acid is X; or

- (f) the 17th amino acid is X,

wherein X is an amino acid which is not charged at neutral pH.

3. (Currently amended) The modified hG-CSF of claim 2, wherein X is selected from the group consisting of Ser, Thr, Ala or and Gly.

4. (Original) The modified hG-CSF of claim 3, wherein X is Ser.

5. (Previously presented) A DNA encoding the modified hG-CSF of claim 1.

6. (Original) The DNA of claim 5, wherein the 1st to the 60th nucleotide sequence of the modified hG-CSF DNA corresponds to one selected from the group consisting of SEQ ID NOS: 55, 57, 59, 61, 63, 65, 67 and 69.

7. (Original) An expression vector comprising the DNA of claim 5.

8. (Original) The expression vector of claim 7, which further comprises a polynucleotide encoding a signal peptide attached at the 5'-end of the DNA encoding the modified hG-CSF.

9. (Currently amended) The expression vector of claim 8, wherein the signal peptide is an *E. coli* thermoresistant enterotoxin II signal peptide or a modified *E. coli* thermoresistant enterotoxin II signal peptide.

10. (Original) The expression vector of claim 9, wherein the *E. coli* thermoresistant enterotoxin II signal peptide has the amino acid sequence of SEQ ID NO: 53.

11. (Original) The expression vector of claim 9, wherein the modified *E. coli* thermoresistant enterotoxin II signal peptide has the amino acid sequence of SEQ ID NO: 54.

12. (Original) The expression vector of claim 9, which further comprises a modified *E. coli* enterotoxin II Shine-Dalgarno sequence having the nucleotide sequence of SEQ ID NO: 71.

13. (Original) The expression vector of claim 8, wherein the signal peptide is *E. coli* beta lactamase signal peptide or modified *E. coli* beta lactamase signal peptide.

14. (Original) The expression vector of claim 13, wherein the *E. coli* beta lactamase signal peptide has the amino acid sequence of SEQ ID NO: 24.

15. (Original) The expression vector of claim 8, wherein the signal peptide is *E. coli* Gene III signal peptide or modified *E. coli* Gene III signal peptide.

16. (Original) The expression vector of claim 15, wherein the *E. coli* Gene III signal peptide has the amino acid sequence of SEQ ID NO: 42.

17. (Previously presented) The expression vector of claim 7, which is pT14SS1SG, pT14SS1S17SEG, pTO1SG, pTO1S17SG, pTO17SG or pBAD2M3V17SG.

18. (Previously presented) A microorganism transformed with the expression vector according to claim 7.

19. (Original) The microorganism of claim 18, which is a transformed *E. coli*.

20. (Currently amended) The microorganism of claim 19, wherein the transformed *E. coli* is selected from the group consisting of *E. coli* BL21(DE3)/pT14SS1SG(HM 10310), *E. coli* BL21(DE3)/pT14SS1S17SEG(HM 10311, KCCM-10154), *E. coli* BL21(DE3)/pTO1SG(HM 10409), *E. coli* BL21(DE3)/pTO1S17SG(HM 10410, KCCM-10151), *E. coli* BL21(DE3)/pTO17SG(HM 10411, KCCM-10152), *E. coli* BL21 (DE3)/pTO17TG(HM 10413), *E. coli* BL21 (DE3)/pTO17AG(HM 10414), *E. coli* BL21(DE3)/pTO17GG(HM 10415), *E. coli* BL21(DE3)/pBAD2M3VG(HM 10510, KCCM-10153), *E. coli* BL21(DE3)/pBAD17SG(HM 10511) ~~or~~ and *E. coli* BL21(DE3)/pBAD2M3V 17SG(HM 10512).

21. (Currently amended) A process for producing a modified hG-CSF in a microorganism which comprises culturing the transformed microorganism of claim 18 to produce and secrete the modified hG-CSF to a periplasm.

22. (Previously presented) A DNA encoding the modified hG-CSF of claim 2.

23. (Previously presented) A DNA encoding the modified hG-CSF of claim 3.

24. (Previously presented) A DNA encoding the modified hG-CSF of claim 4.

25. (Previously presented) The expression vector of claim 8, which is pT14SS1SG, pT14SS1S17SEG, pTO1SG, pTO1S17SG, pTO17SG OR pBAD2M3V17SG.

26. (Previously presented) A microorganism transformed with the expression vector according to claim 8.

27. (New) The DNA of claim 6, wherein the 1st to the 60th nucleotide sequence of the modified hG-CSF DNA corresponds to SEQ ID NO: 59.